Harford County Impact Fee Study
Presentation to the County Council on December 14, 2004

During the 2004 Legislative Session, the Maryland General Assembly amended Article 24, §9-10 A-01 OF THE ANNOTATED CODE OF MARYLAND by enacting the Harford County School Construction Act of 2004. In general, this Act provides enabling legislation for the Harford County Council to fix, impose and collect by ordinance, a SCHOOL development impact fee, not to exceed $10,000 for new construction or development. These revenues may only be used for:

1) School Site Acquisition
2) School Construction
3) School Renovation
4) School Debt Reduction; or
5) School Capital Expenses

Impact Fees are not a general fundraising mechanism, but are one time payments used to fund capital improvements needed to accommodate new development. If enacted, Harford County would join Anne Arundel, Calvert, Caroline, Charles, Frederick, Montgomery, Prince George's, Queen Anne's, St. Mary's and Washington counties in imposing Impact Fees.

Nationally known consultants, Tischler & Associates, Inc., were hired in 2003 to assist the County in evaluating the potential of Impact Fees as a new revenue source for Harford County. Development of a County-wide Impact Fee Program generally encompasses a 3 step process as follows:

Step 1: Tischler & Associates, Inc. prepared an initial Impact Fee Reconnaissance to determine which County facilities may be appropriate to consider for the imposition of an Impact Fee. This analysis was completed prior to Harford County receiving enabling legislation by the Maryland General Assembly in November 2003.

Step 2: Tischler & Associates, Inc. have analyzed Impact Fees to meet the Capital improvement demands generated by new development for public schools in Harford County. This Impact Fee Study was recently completed and will be the subject of a December 14, 2004 presentation to the County Council by Planning and Zoning staff and representatives of Tischler and Associates, Inc. during the Council's regular Legislative Session. The Study provides a schedule of the maximum supportable Impact Fees for different housing types in Harford County.

Step 3: The County Executive and County Council anticipate the joint preparation of an Impact Fee Ordinance by the County's Law Department and County Council's attorney within 30-60 days following the December 14th presentation.

The Harford County Impact Fee Study, prepared by Tischler & Associates, Inc., follows this page. If you have any questions, please call the Department of Planning and Zoning 410 638 3103.

School Impact Fees

Prepared for:

Harford County, Maryland

December 2, 2004

Prepared by:

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HARFORD COUNTY, MARYLAND
IMPACT FEE STUDY

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EXECUTIVE SUMMARY

Tischler & Associates, Inc., (TA) was retained by Harford County, Maryland, to analyze impact fees to meet the capital improvement demands generated by new development for public schools. This is in accordance with the state enabling legislation for Harford County, Article 24, §9-10A-01 of the Code of Maryland, which states:

> "In general.- The County Council of Harford County, by ordinance, may fix, impose, and provide for the collection of a development impact fee not to exceed $10,000 for new construction or development…..Use of revenues.- The revenues from the special fund may be used only for:
>
> (1) School site acquisition;
> (2) School construction;
> (3) School renovation;
> (4) School debt reduction; or
> (5) School capital expenses. "

A copy of the entire state enabling legislation can be found in Appendix 2 at the end of this report.

Methodologies and calculations are presented in this report as supporting documentation for implementation of an impact fee Harford County.

Impact fees are one-time payments used to construct system-wide, capacity improvements needed to accommodate new development. An impact fee represents new growth's fair share of capital facility needs.

TA evaluated possible methodologies and documented appropriate demand indicators by type of development for each type of fee. Specific capital costs have been identified using local data and current dollars. The formula used to calculate each impact fee is diagrammed in a flow chart at the beginning of each section. Also, for each type of fee the report includes a summary figure indicating the specific factors used to derive the impact fee. These factors are referred to as Level-Of-Service (LOS) standards. School fees are calculated for the County as a whole and are for residential growth only.

Fee Methodologies

There are three basic *methods* used to calculate impact fees. These can be thought of as evaluating the past, present, and future capacity of capital facilities and assets. The **buy-in methodology** (past) is best suited for facilities that were oversized in anticipation of new growth and have available capacity. New growth "buys-in" to the facility through the impact fee and pays the local government back for oversizing the facility. Impact fees calculated using

the **incremental expansion methodology** (present) are based on existing LOS. The assumption is that the existing LOS will be extended to new growth. The **plan-based methodology** (future) utilizes projects in the capital improvement program (CIP) that will add capacity.

TA's approach is to evaluate these methodologies to determine the maximum, supportable impact fee amount. "Supportable" means fees that are legally defensible and can also be supported from fiscal and policy perspectives.

For Harford County, it is anticipated that capacity projects will be needed to serve future elementary, middle, and high school student enrollments. Additionally, as student enrollment increases, the schools will need additional support facilities and vehicles and equipment. Therefore an incremental approach methodology is employed to develop the school impact fees.

Credits

Another general requirement that is common to impact fee methodologies is the evaluation of *credits*. There are several types of credits that have been considered in the impact fee methodology. To avoid double payment for school facilities, the school impact fee methodology includes a **principal payment credit** for the residential share of capacity projects the County has funded using General Obligation (G.O.) bonds. Double payment occurs when an impact fee is paid for a capital facility that is also being paid for via annual property tax levy. The credit is deducted from the impact fee amount, thus avoiding double payment.

The second type of credit is a **site-specific credit** for system improvements that have been included in the impact fee calculations. Project improvements normally required as part of the development approval process are not eligible for credits against impact fees. Specific policies and procedures related to site-specific credits for system improvements are addressed in the ordinance that establishes the County's impact fees. However, the general concept is that developers may be eligible for site-specific credits or reimbursements only if they provide system improvements that have been included in the impact fee calculation schedule.

Maximum Supportable Impact Fees

Figure 1 provides a schedule of the *maximum supportable impact fees* for Harford County. The fees for schools are based on a countywide service area and are only assessed against residential growth. The fees for residential development are assessed per housing unit and should be collected when building permits are issued. TA is aware of the current controversy regarding age-restricted housing in Harford County. The County's impact fee ordinance should establish administrative procedures to evaluate age-restricted housing development on a case-by-case basis to waive the school impact fees if the development can prove it does not generate public school students. It is TA's experience that school impact fees are never charged against age-restricted housing provided the age restrictions are a part of the deed.

The County may adopt fees that are less than the amounts shown. However, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures and/or a decrease in the County's level of service.

Figure 1. Maximum Supportable Impact Fees

Maximum, Justifiable Impact Fee per Unit (Countywide)	*Elementary*	*Middle*	*High*	*TOTAL*
Single Family	$2,860	$2,158	$3,251	$8,269
Townhouse	$2,129	$1,179	$2,411	$5,720
Multi-Family *	$808	$492	$338	$1,637

* Includes Mobile Homes.

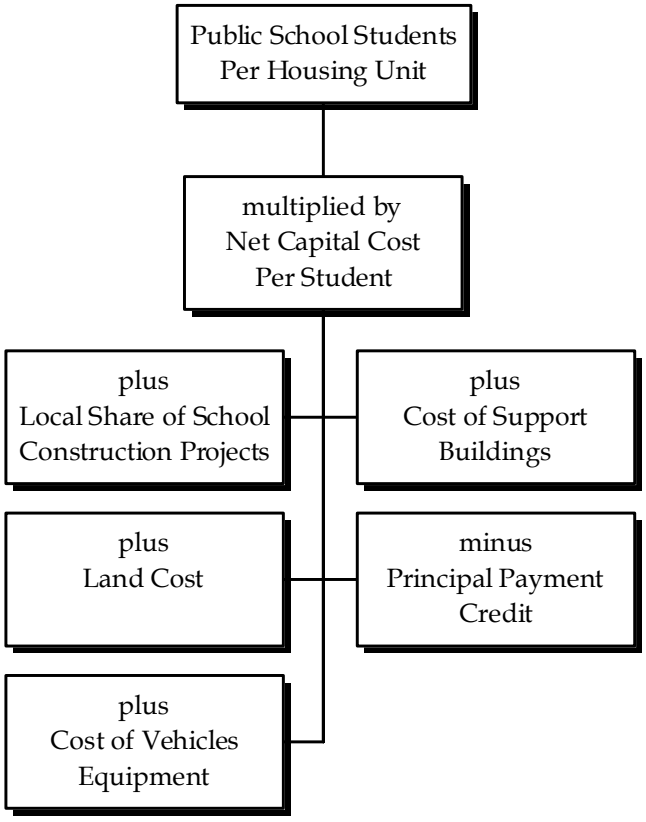
A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Results are discussed in the report using one-and two-digit places (in most cases), which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not due to rounding in the analysis).

SCHOOLS

Methodology

The school impact fee methodology is based on current public school student generation rates, local costs, and level of service standards. Figure 2 illustrates the methodology used to calculate the fee. It is anticipated that capacity projects will be needed to serve future elementary, middle, and high school student enrollments. Therefore an incremental approach methodology is employed to develop the fees. A credit is included in the fee for the amount of outstanding County debt incurred for school capacity expansion projects to avoid future double payments by new residents.

Figure 2. Public School Impact Fee Methodology Chart



Public School Students per Household

Student generation rates by type of housing unit will be used for the County school impact fee. The term "pupil generation rate" or "yields" refers to the number of public school student per housing unit in Harford County. Public school students are a subset of school-aged children, which includes students in private schools and home-schooled children.

As a part of its Adequate Public Facilities Ordinance (APFO), Harford County has developed an extensive and reasonable pupil generation survey and methodology. This methodology is described in the Appendix of the County's *2003 Annual Growth Report* as follows:

"Forty subdivisions were selected from various geographic locations throughout Harford County, to include single family dwellings, townhouse units, apartments/condominium units, and mobile home units. The subdivisions selected represented newly constructed and established subdivisions ranging in size from 28 units to 2,423 units (11,687 total units surveyed). Additionally, subdivisions were selected to provide a broad range of attendance areas across the County. A count was made of each student who resided in each of the forty subdivisions studied. The data were tabulated by unit type, and the specific pupil yields were calculated for each subdivision in the elementary, middle, and high schools."

The resulting pupil generation rates are shown in the figure below:

Figure 3. Harford County APFO Student Generation Rates

	K-5	6-8	9-12	TOTAL
Single Family	0.31	0.16	0.20	0.66
Townhome	0.23	0.09	0.15	0.47
Apartments (2 bedrooms)	0.08	0.03	0.01	0.12
Condo (2+ bedrooms)	0.08	0.03	0.01	0.12
Moblie Home	0.11	0.04	0.06	0.21

Because there are differences in the legal requirements and planning timeframes between the County's APFO and impact fees, TA recommends the following adjustments to the pupil generation rates in order to make them appropriate for use in calculating the school impact fees.

TA recommends adjusting the housing categories for the impact fees to three categories: single family, townhouse, and multi-family. There are several reasons for this. First, the impact fees must be applied equally regardless of housing ownership status, thus the apartment and condo categories should be consolidated into a multi-family category. Administration and collection of the impact fees could be extremely difficult if building permits must be checked for the number of bedrooms in order to determine the appropriate impact fee amount. Thus, the housing categories distinguished by the number of bedrooms are not included. Because the

sample size of mobile homes in the APFO survey is somewhat small (387 units of the total 11,687 housing units surveyed), and the likelihood of few new mobile homes coming into the County, mobile homes are included in the multi-family category.

Using the raw data from the County's survey, TA recalculated the County's pupil generation rates to reflect three housing categories of single family, townhouse, and multi-family.

Figure 4. Harford County APFO Student Generation Rates, Recalculated for Three Housing Categories

	Housing Units in Sample	*Elementary Pupils*	*Elementary Yield*	*MS Pupils*	*MS Yield*	*HS Pupils*	*HS Yield*	*Total Pupils*	*All Grades Yield*
Single Family	5,120	1,563	0.31	803	0.16	1,035	0.20	3,401	0.66
Townhouse	4,329	984	0.23	371	0.09	649	0.15	2,004	0.46
Multi-Family *	2,238	193	0.09	80	0.04	47	0.02	320	0.14
All Housing Types (blended)	11,687	2,740	0.23	1,254	0.11	1,731	0.15	5,725	0.49

* Includes Mobile Homes.

New housing has a higher pupil generation rate than older housing. This is evident if the APFO pupil generation rates are applied to the County's current housing stock.

Figure 5. Comparison of Public School Student Yield Factors

	2004 Estimated Housing Units	*Elementary Yield*	*Estimated Students (unadjusted)*	*MS Yield*	*Estimated Students (unadjusted)*	*HS Yield*	*Estimated Students (unadjusted)*	*Total Students*
Single Family	56,022	0.31	17,102	0.16	8,786	0.20	11,325	37,213
Townhouse	17,037	0.23	3,873	0.09	1,460	0.15	2,554	7,887
Multi-Family *	17,595	0.09	1,517	0.04	629	0.02	370	2,516
TOTAL	90,654		22,492		10,875		14,248	47,616
Actual Number of Students Fall 2004			18,540		9,441		12,339	40,320
* Includes Mobile Homes.								
Difference			3,952		1,434		1,909	7,296

The APFO rates overstate the number of total numbers of students by 7,296 over the actual Fall 2004 enrollment (note these figures do not include students in private school or home school). If the APFO pupil generation rates were used in the impact fee calculations, it would overstate the demand for school facilities.

This higher pupil generation rate is appropriate for APFO purposes, because the planning horizon for the APFO is relatively short (six years) and measures the immediate impact of new housing. However, the useful life of school infrastructure is 20+ years. If the higher pupil

generation rates were used for long-term infrastructure planning, it would result in excess capacity. Thus these pupil generation rates must be adjusted to the actual enrollment and the County's entire housing stock. This is described and shown below.

Using the Single Family, Elementary rate of .31 from the County's APFO survey as an example, the first step is to estimate the number of elementary school students in single family housing units by multiplying the .31 rate by total number of single family housing units in 2004 (.31 x 56,022 = 17,102). An adjustment factor is then calculated by dividing the actual total enrollment of elementary students in 2004 by the total estimated number of elementary school students in 2004 (18,540/22,492 = .82). The .31 rate is multiplied by .82 to determine the elementary school student rate for single family housing units of .25 (.31 x .82 = .25).

As a check, the adjusted rates are multiplied by the total number of housing units in each category to estimate the total enrollment for each school level. For example, using the adjusted elementary pupil generation rates results in an estimate of 18,540 elementary students which matches the actual 2004 total enrollment.

This calculation is repeated for each type of housing unit for each category of students.

Figure 6. Student Generation Rates

Elementary School Students Per Housing Unit in Fall 2004

	Housing Units	*Estimated Students*	*Actual Students*	*Adjusted Multipliers*	*Check*
Single Family	56,022	17,102		0.25	14,097
Townhouse	17,037	3,873		0.19	3,192
Multi-Family *	17,595	1,517		0.07	1,251
	90,654	22,492	18,540		18,540

Middle School Students Per Housing Unit in Fall 2004

	Housing Units	*Estimated Students*	*Actual FTE Students*	*Adjusted Multipliers*	*Check*
Single Family	56,022	8,786		0.14	7,627
Townhouse	17,037	1,460		0.07	1,268
Multi-Family *	17,595	629		0.03	546
	90,654	10,875	9,441		9,441

High School Students Per Housing Unit in Fall 2004

	Housing Units	*Estimated Students*	*Actual FTE Students*	*Adjusted Multipliers*	*Check*
Single Family	56,022	11,325		0.18	9,807
Townhouse	17,037	2,554		0.13	2,212
Multi-Family *	17,595	370		0.02	320
	90,654	14,248	12,339		12,339

* Includes Mobile Homes.

The figure below compares the adjusted pupil generation rates to the unadjusted rates in the County's APFO ordinance.

Figure 7. Comparison of Adjusted and Unadjusted Student Generation Rates

2004 Public School Students Per Housing Unit (adjusted)

	Elementary	*Middle*	*High*	*All Grades*
Single Family	0.25	0.14	0.18	0.56
Townhouse	0.19	0.07	0.13	0.39
Multi-Family *	0.07	0.03	0.02	0.12
All Hsg Types (blended)	0.21	0.10	0.14	0.45

2004 Public School Students Per Housing Unit (unadjusted)

	Elementary	*Middle*	*High*	*All Grades*
Single Family	0.31	0.16	0.20	0.66
Townhouse	0.23	0.09	0.15	0.46
Multi-Family *	0.09	0.04	0.02	0.14
All Hsg Types (blended)	0.25	0.12	0.16	0.53

Difference

	Elementary	*Middle*	*High*	*All Grades*
Single Family	-0.05	-0.02	-0.03	-0.10
Townhouse	-0.04	-0.01	-0.02	-0.07
Multi-Family *	-0.02	0.00	0.00	-0.02
All Hsg Types (blended)	-0.04	-0.02	-0.02	-0.08

* Includes Mobile Homes.

Collection and Expenditure Zones

Collection and expenditure are sometimes recommended to meet the rational nexus test of impact fees. The substantial benefit component of the rational nexus test usually leads communities to set up collection and expenditure zones for public facilities which have geographic service areas. These zones are used to document where in the jurisdiction the impact fee money is coming from and where new facilities will be constructed that are funded, at least in part, through the use of impact fees.

Harford County Public Schools operates under a single district method, i.e. one geographic service area. This is evident in its policies and practices.

Policy

The Board of Education annually evaluates schools for available space and reassigns students to maintain proper class sizes. This policy, titled *Balancing Capacity and Enrollment* (descriptor 07.01.026), contains the following policy statement:

"The Harford County Board of Education believes that it is in the best interest of students for the system to balance enrollments with capacities in order to: assure the quality of educational experiences; provide consistency in curriculum, instruction, and programs; maintain safe schools and promote the uniform and efficient use of school facilities and resources. With the advice of the Superintendent, the Board of Education shall annually review options for better matching school enrollments with the established state rated school capacities.

Each year the Superintendent will prepare a report that contains an analysis of enrollment relative to state rated capacities. The report will contain recommendations and alternatives, with rationales, for addressing imbalances; and the report will be presented to the Board of Education in October. The Board of Education may direct the Superintendent to develop additional information and/or develop other alternatives for its consideration, or the Board of Education may propose other specific alternatives."

Construction of new schools or capacity expansions will create additional space in the school system thus providing relief in other parts of the school district. The School Board also adjusts school district boundaries on an occasional basis in order to help maximize capacities at respective schools.

The figure below lists past redistricting efforts by the School Board to address capacity issues.

Figure 8. Chronolgy of Redistricting Activity in Harford County

SCHOOL YEAR	PURPOSE	SCHOOLS AFFECTED	NUMBER OF STUDENTS
1990*	OPEN NEW RING FACTORY ES	BEL AIR ES, WM. S. JAMES ES, WM PACA/OPR ES,	600**
1990	ADDITION-PROSPECT MILL ES	PROSPECT MILL ES, HICKORY ES, CHURCHVILLE ES	200
1991	OPEN NEW NORTH BEND ES	NORTH HARFORD ES, JARRETSVILLE ES, FOREST HILL ES, NORRISVILLE ES,	600
1992	OPEN NEW ABINGDON ES	RING FACTORY ES, RIVERSIDE ES, WM PACA/OPR ES, WM S. JAMES ES	600
1993	OPEN NEW FALLSTON MS	BEL AIR MS, SOUTHAMPTON MS. CM WRIGHT HS, FALLSTON HS	900
1993	OPEN NEW FOUNTAIN GREEN ES	BEL AIR ES, HICKORY ES, PROSPECT MILL ES,	600
1994	OPEN NEW EMMORTON ES ES	RING FACTORY ES, HOMESTEAD/WAKEFIELD ES	600
1994	OPEN NEW CHURCH CREEK ES	BAKERFIELD ES, CHURCHVILLE ES, HILLSDALE ES, HALL'S CROSSROADS ES, RIVERSIDE ES, WM PACA/OPR ES	600
1996	BALANCING ENROLLMENT	ABINGDON ES, WM PACA/OPR ES, EDGEWOOD ES, EMMORTON ES, WM S. JAMES ES	240
1996	BALANCING ENROLLMENT	MEADOWVALE ES, DARLINGTON ES, HAVRE DE GRACE ES	140
1997	FOREST LAKES ES	FOREST HILL ES, HICKORY ES, PROSPECT MILL ES,	600
2000	FOREST HILL ES	FOREST HILL ES, HICKORY ES, PROSPECT MILL ES,	600
2002	BALANCING ENROLLMENT	SOUTHAMPTON MS, BEL AIR MS, FALLSTON MS, NORTH HARFORD MS, C.M. WRIGHT HS, NORTH HARFORD HS, DUBLIN ES, FOREST HILL ES	600
		TOTAL:	6280

* DATE INDICATES YEAR OF IMPLEMENTATION
** NUMBERS ARE APPROXIMATE
SOURCE: BOE OF HARFORD COUNTY, NOVEMBER 2004

Practice

In addition to this policy, the schools practice the single district method, evident by approximately 3 percent of public school students attend school outside of their home-based school, attending either special education programs or specialty centers (technical education, magnet programs). Also, the district is currently configured in a way that 16 percent of all elementary schools and 38 percent of middle schools feed to more than one school at the next level.

Another example of this practice will occur when Patterson Mill Middle/High School is completed in 2007. This school will likely affect some of the middle schools and many of the high school attendance areas and require rebalancing capacity.

The Board of Education's Capital Improvements Program FY2006-FY2013 indicate capacity improvement projects throughout the County and at all grade levels. This indicates a countywide demand for additional capacity. As this additional capacity is added to the system, the Board of Education will follow its policy of annually evaluating schools for available space

and reassign students to maintain proper class sizes. Thus, the impact fees will produce countywide benefits.

Building and Site Area Standards

Figures 8, 9, and 10 provide a current inventory of public schools in Harford County. The data contained in these figures were used to determine level of service (LOS) standards for school sites and buildings.

As indicated in Figure 9, elementary school buildings have a total of 1,974,346 square feet of floor area on 613 acres. Total enrollment in all elementary schools from Fall 2004 is 18,540. Utilization for individual schools is calculated by dividing enrollment by the state-rated capacity (SRC). In Harford County in the 2004-05 school year, utilization ranges from a low of 66 percent in Hall's Cross Roads Elementary School to a high of 119 percent at Prospect Mill Elementary. The average SRC for all schools is 96 percent. For elementary schools, the LOS standard on which the impact fees are based is calculated using state rated capacity, since these schools overall are currently operating under capacity. That is, a level of service that is based on the SRC represents a lower LOS in relation to the LOS based on actual enrollment. Therefore, the County's level of service for elementary school space is 102 square feet per student (1,974,346 SF divided by 19,264 seats).

Figure 9. Inventory of Harford County Elementary Schools

Elementary School	*Grades*	*Site Acreage*	*Building Square Feet*	*Relocatable Classrooms*	*Actual Enrollment (Fall 2004)*	*State-Rated Capacity (SRC)*	*Utilization*
Abingdon	Pre-K - 5	28.71	91,229		841	883	95.24%
Bakerfield	Pre-K - 5	10.00	65,691		509	489	104.09%
Bel Air	Pre-K - 5	6.31	49,748		534	536	99.63%
Church Creek	Pre-K - 5	20.51	85,801		754	846	89.13%
Churchville	Pre-K - 5	6.46	52,360		383	419	91.41%
Darlington	K - 5	7.89	24,237		137	182	75.27%
Deerfield	Pre-K - 5	19.00	57,529	4	670	576	116.32%
Dublin	Pre-K - 5	24.69	44,385		268	317	84.54%
Edgewood	Pre-K - 5	44.71	67,341		506	571	88.62%
Emmorton	K - 5	22.04	63,000		617	566	109.01%
Forest Hill	K - 5	8.44	64,722		603	626	96.33%
Forest Lakes	K - 5	20.03	68,971	3	679	586	115.87%
Fountain Green	K - 5	23.87	60,000	1	616	591	104.23%
George D. Lisby	Pre-K - 5	20.01	56,295		378	464	81.47%
Hall's Cross Roads	Pre-K - 5	12.73	63,082		364	554	65.70%
Harve de Grace	Pre-K - 5	10.25	65,085		461	616	74.84%
Hickory	K - 5	33.11	77,958		667	686	97.23%
Homestead	Pre-K - 5	15.00	52,628	1	970	978	99.18%
Jarrettsville	K - 5	27.44	61,275		455	564	80.67%
Joppatowne	Pre-K - 5	17.19	54,885	1	567	544	104.23%
Magnolia	Pre-K - 5	17.00	59,900	5	575	556	103.42%
Meadowvale	Pre-K - 5	13.26	69,000		575	608	94.57%
Norrisville	K - 5	11.54	37,417		184	272	67.65%
North Bend	Pre-K - 5	18.23	60,221		471	579	81.35%
North Harford	Pre-K - 5	20.00	49,703	2	534	514	103.89%
Old Post Road/Wm Paca	Pre-K - 5	23.00	57,965	2	1,026	1,033	99.32%
Prospect Mill	Pre-K - 5	15.00	65,833	6	908	758	119.79%
Ring Factory	K - 5	34.26	59,132	2	555	591	93.91%
Riverside	Pre-K - 5	13.18	55,711		561	586	95.73%
Roye-Williams	Pre-K - 5	28.00	78,126		643	671	95.83%
William S. James	Pre-K - 5	15.00	58,500		521	564	92.38%
Youth's Benefit Intermediate Building	K - 5	15.00	52,775	2	1,008	938	107.46%
Youth's Benefit Primary Building		11.18	43,841				
	TOTAL	613	1,974,346	29	18,540	19,264	96%
	AVERAGE	19	59,829	3	579	602	95%
LOS per Student *		0.03	102	0.002		*State Rated Capacity*	96%

* Based on SRC.

Level of service for Harford County middle schools is shown below in Figure 10. As shown, a total of 9,370 students are enrolled in the eight Harford County middle schools with a total capacity at 95 percent. For the middle school LOS of 127 SF per student (1,256,932 SF divided by 9,884 seats), state-rated capacity is used, since these schools are currently under capacity.

Figure 10. Inventory of Harford County Middle Schools

Middle School	*Grades*	*Site Acreage*	*Building Square Feet*	*Relocatable Classrooms*	*Actual Enrollment (Fall 2004)*	*State-Rated Capacity (SRC)*	*Utilization*
Aberdeen	6 - 8	43.83	196,800		1,302	1,656	78.62%
Bel Air	6 - 8	25.84	164,900	2	1,402	1,316	106.53%
Edgewood	6 - 8	34.21	166,530	4	1,277	1,338	95.44%
Fallston	6 - 8	96.59	115,740	10	1,224	988	123.89%
Harve de Grace	6 - 8	37.34	102,000		605	785	77.07%
Magnolia	6 - 8	69.33	149,100		913	1,030	88.64%
North Harford	6 - 8	40.00	173,728		1,118	1,241	90.09%
Southhampton	6 - 8	35.99	188,134	4	1,529	1,530	99.93%
	TOTAL	383	1,256,932	20	9,370	9,884	95%
	AVERAGE	48	157,117	5	1,171	1,236	95%
LOS per Student*		0.04	127	0.002		*State-Rated Capacity*	95%

* Based on SRC.

Figure 11 lists the level of service for high schools in Harford County. There are a total of 12,235 students enrolled in the nine high schools. The high schools total 1,773,683 square feet on 504 acres with a total capacity at 104 percent. For the high school LOS of 145 SF per student (1,773,683 SF divided by 12,235), current enrollment is used, since these schools are currently over capacity.

Figure 11. Inventory of Harford County High Schools

High School	*Grades*	*Site Acreage*	*Building Square Feet*	*Relocatable Classrooms*	*Actual Enrollment (Fall 2004)*	*State-Rated Capacity (SRC)*	*Utilization*
Aberdeen	9 - 12	30.00	209,150		1,358	1,360	99.85%
Bel Air	9 - 12	40.00	187,980	11	1,638	1,423	115.11%
C. Milton Wright	9 - 12	60.00	220,910	10	1914	1666	114.89%
Edgewood	9 - 12	48.95	193,660	1	1,358	1,379	98.48%
Fallston	9 - 12	96.59	233,500		1,635	1,529	106.93%
Harford Technical	9 - 12	55.00	218,225		1,069	965	110.78%
Harve de Grace	9 - 12	35.00	144,815		705	849	83.04%
Joppatowne	9 - 12	65.16	183,573		1,109	1,115	99.46%
North Harford	9 - 12	73.00	181,870	16	1,449	1,454	99.66%
	TOTAL	504	1,773,683	38	12,235	11,740	104%
	AVERAGE	59	195,567	10	1,360	1,298	104%
LOS per Student*		0.04	145	0.003		*State-Rated Capacity*	104%

* Based on actual enrollment.

Local Cost of Public Schools

As shown in Figure 12, school costs are averaged based on the actual cost of recent capacity projects from the last five years, budget estimates for future projects, and in cases where neither of the above are available, State planning figures for eligible projects. Project cost estimates for new schools are $140 per square foot for elementary schools, $165 per square foot for middle schools, and $165 per square foot for high schools. Total project costs must be reduced to the local share for the purpose of deriving school impact fees. Harford County is currently providing approximately 58 percent of school capital funding with the remaining funding provided by the State of Maryland (42 percent).

The funding percentages are based on recent experience. Due to funding limitations at the State, Harford County as been funding a larger share of school construction projects. It is anticipated that this trend will continue.

Figure 12. School Project Costs

Elementary School	*Year*	*Type of Construction*	*Square Feet*	*Cost/ SF*	*Total Cost*	*Local Funding*	*State Funding*
Forest Hill	2000	New	64,722	$127	$8,241,872	$4,327,872	$3,914,000
Abingdon	2001	Addition	29,318	$140	$4,111,586	$3,043,586	$1,068,000
Church Creek	2001	Addition	26,206	$169	$4,438,242	$2,850,242	$1,588,000
TOTAL			120,246	$140	$16,791,700	$10,221,700	$6,570,000

Middle School	*Year*	*Type of Construction*	*Square Feet*	*Cost/ SF*	*Total Cost*	*Local Funding*	*State Funding*
Fallston	1993	New	115,740	$84	$9,687,348	$3,940,995	$5,746,353
Bel Air	1994	Addition	41,200	$95	$3,931,999	$1,936,211	$1,995,788
TOTAL			156,940	$87	$13,619,347	$5,877,206	$7,742,141

* Because there are no figures for recent middle school construction projects, the State planning figure for eligible projects of $165 will be used.

High School	*Year*	*Type of Construction*	*Square Feet*	*Cost/ SF*	*Total Cost*	*Local Funding*	*State Funding*
Harford Technical	1999	Addition	77,665	$131	$10,181,543	$5,854,543	$4,327,000
Aberdeen	2004	New	199,893	$178	$35,559,339	$20,341,339	$15,218,000
TOTAL			277,558	$165	$45,740,882	$26,195,882	$19,545,000
					$62,532,582	$36,417,582	$26,115,000
				Percent Funding **		58%	42%

** Middle School funding allocations are omitted from this calculation because there have been no recent middle school projects.

Cost of Support Buildings

Support facilities represent another capital cost incurred by Harford County in order to accommodate new development. As shown in Figure 13, the total replacement cost of the support facilities totals $24,208,050. This is divided by the total, current enrollment of 39,134 which yields a cost per student of $618.59 ($24,208,050/39,134 students = $618.59 per student).

Figure 13.Board of Education Support Facilities

Support Facility	*Type of Building*	*Building Square Feet*	*Cost/ SF**	*Replacement Cost*
Agricultural Barn	Storage	7,680	$100	$768,000
Forest Hill Annex	Office/Warehouse	30,315	$125	$3,789,375
Hickory Annex	Maint	35,652	$125	$4,456,500
Mansion	Office	3,960	$125	$495,000
Tenant	Office	3,220	$90	$289,800
Dining Hall	Cafeteria	4,327	$125	$540,875
Pavilion	Instructional	2,100	$125	$262,500
Building A-Dorm	Residence	8,500	$150	$1,275,000
Building B-Dorm	Residence	8,500	$150	$1,275,000
Building C-Multi-Purpose	Storage	1,040	$150	$156,000
New Administration Building	Office	70,000	$156	$10,900,000
TOTAL		175,294		$24,208,050
2004 Enrollment				39,134
Cost per Student				$618.59

*Source: Harford County Public Schools.

Cost of School Sites

The County School System anticipates the need to purchase land for future school sites to accommodate school capital needs brought about by growth in the County. While the school system has not made any recent land purchases, the County has made several land purchases for public facilities. These purchases are shown in Figure 13. This list includes land acquisitions for the last five years and excludes land zoned for agriculture because this land is generally not suitable for schools sites in terms of access and location. The $79,000 per acre cost figure is used for the land component of the school impact fee.

Figure 14.Cost of Recent County Land Acquisitions

Date	*Acres*	*Address*	*Zoning*	*Total*	*Cost/Acre*
8/3/2000	6.1	3724 Norrisville Road	VR VB	$1,400,000	$230,643
8/16/2000	13.6	3201 Philadelphia Road	R1	$340,000	$24,943
1/31/2001	0.1	2125 Old Edgewood Road	B2	$38,200	$477,500
6/21/2001	28.9	Cedar Drive	R4	$992,000	$34,373
8/10/2001	1.0	4127 Philadelphia Road	R1	$95,000	$94,059
8/10/2001	1.0	4125 Philadelphia Road	R1	$105,000	$100,962
8/10/2001	1.8	S S Route 40	R3	$650,000	$361,915
8/10/2001	8.4	3023 Pulaski Highway	C1	$650,000	$77,473
8/31/2001	0.5	Main Street and Route 22	B2AB3	$600,000	$1,153,846
TOTAL	61.4			$4,870,200	$79,323
				Rounded Cost/Acre	$79,000

Vehicles & Equipment

As the County School System expands the capacity of its facilities, additional vehicles and equipment will be needed to support them. Figure 14 lists the current inventory of 321 vehicles and pieces of equipment. School staff provided information on the current replacement values. The total replacement value of the fleet ($10,019,000) is divided by the current enrollment (39,134) which results in a cost per pupil of $256.02.

Figure 15.Vehicles & Equipment

Vehicle/Equipment	*Number of Units*	*Cost/ Unit**	*Replacement Cost*
School Buses	84	$65,000	$5,460,000
Sedans	28	$17,000	$476,000
1/2 Ton Vans	15	$14,000	$210,000
1 Ton Vans	41	$23,000	$943,000
Mini-Vans	4	$23,000	$92,000
Lift Gate Van	1	$50,000	$50,000
Step Vans	6	$37,000	$222,000
SUV	1	$23,000	$23,000
Bucket Truck	1	$65,000	$65,000
Forestry Truck	1	$48,000	$48,000
Stake Body Truck	1	$33,000	$33,000
Box Truck	2	$40,000	$80,000
Refrigerated Box Truck	1	$75,000	$75,000
Dump Truck	6	$70,000	$420,000
1/2 Ton Pickup Truck	11	$15,000	$165,000
1 Ton Pickup Truck	12	$25,000	$300,000
Zero Turn Tractor	12	$6,000	$72,000
Commercial Front Tractor	30	$16,000	$480,000
Garden Tractor	27	$5,000	$135,000
Range Wing Mower	4	$40,000	$160,000
Utility Tractor	10	$17,000	$170,000
Compact Tractor	16	$15,000	$240,000
Walk Behind Mower	5	$4,000	$20,000
Backhoe	2	$40,000	$80,000
TOTAL	321		$10,019,000
2004 Enrollment			39,134
Cost per Student			$256.02

* Source: Harford County Public Schools.

Credit for Future Principal Payments on School Capacity Projects

Figure 16 provides the credit calculation based on the principal payments to be made by the County on the outstanding public school debt. A credit is necessary since new residential units that pay school impact fees will also contribute to future principal payments through property taxes. To account for the time value of money, annual principal payments per student are discounted using a net present value formula based on the interest rates for the bonds. Only the principal portion is included in the calculation because only the school construction costs (without financing costs) are used in the study.

Because the County debt financed a portion of recent school capacity expansion construction costs, TA recommends a credit for future principal payments on outstanding General Obligation (G.O.) debt. The County has approximately $56.4 million of outstanding G.O. debt for schools. The amount of the debt has been adjusted to reflect the portion of outstanding principal to be borne by residential property owners. Based on real property assessable base data compiled by the Maryland State Department of Assessments and Taxation, residential property represents 92.9 percent of the total value of real property in the County. Therefore, each fiscal year's outstanding principal for school capacity projects is reduced to 92.9 percent of the total. The amount of debt was then adjusted to account for only the portion that was used for new school construction or capacity expansions at existing schools. TA reviewed the County's debt service information and determined approximately 54.7 percent of the debt service was used for new school construction or capacity expansions at existing schools.

Figure 16. Credit for Future Principal Payments

Fiscal Year	Total Principal Payment	Adjusted Total (92.9%)*	Capacity Related (54.7%)**	Students***	Credit per Student
2005	$4,178,466	$3,881,795	$2,123,342	40,159	$52.87
2006	$4,146,171	$3,851,793	$2,106,931	40,165	$52.46
2007	$3,601,841	$3,346,110	$1,830,322	39,940	$45.83
2008	$4,114,908	$3,822,750	$2,091,044	39,719	$52.65
2009	$3,901,731	$3,624,708	$1,982,715	39,448	$50.26
2010	$3,873,604	$3,598,578	$1,968,422	39,280	$50.11
2011	$3,749,135	$3,482,946	$1,905,172	39,229	$48.57
2012	$3,629,858	$3,372,138	$1,844,560	39,263	$46.98
2013	$3,952,179	$3,671,574	$2,008,351	39,148	$51.30
2014	$2,989,809	$2,777,533	$1,519,310	38,877	$39.08
2015	$2,900,291	$2,694,370	$1,473,821	38,733	$38.05
2016	$2,855,160	$2,652,444	$1,450,887	38,590	$37.60
2017	$2,369,892	$2,201,630	$1,204,291	38,446	$31.32
2018	$2,303,720	$2,140,156	$1,170,665	38,303	$30.56
2019	$2,005,293	$1,862,917	$1,019,016	38,159	$26.70
2020	$2,005,293	$1,862,917	$1,019,016	38,016	$26.81
2021	$1,671,169	$1,552,516	$849,226	37,872	$22.42
2022	$1,185,328	$1,101,170	$602,340	37,729	$15.96
2023	$480,897	$446,753	$244,374	37,585	$6.50
2024	$480,897	$446,753	$244,374	37,442	$6.53
TOTAL	$56,395,642	$52,391,551	$28,658,179		$732.56
				Discount Rate	5.0%
				Net Present Value	$502.79

** Outstanding debt is reduced to reflect portion borne by residential base (92.9%).*

*** TA estimated amount for capacity expansions (new schools or additions).*

**** Harford County Public School projections through 2013. TA estimates for 2014 to 2024 based on linear trend extrapolation of 2005 to 2013 data. These estimates are consistent with estimates from Maryland Department of Planning, State Board of Education, Harford County Public Schools, and Harford County Department of Planning and Zoning.*

School Impact Fee Input Variables

Factors used to derive the school impact fee are summarized in Figure 17. Impact fees for schools are based on student generation rates (i.e., public school students per housing unit) and are only implemented on residential development. Level of Service standards are based on current costs per student for buildings, land, support facilities, and vehicles and equipment as discussed in the previous sections. The credit for future principal payments is subtracted from the total capital cost per student to derive the net capital cost per student.

Figure 17. Harford County Public Schools Impact Fee Input Variables

	Type of School			
Public School Students per Housing Unit 2004	*Elementary*	*Middle*	*High*	*TOTAL*
Single Family	0.25	0.14	0.18	0.56
Townhouse	0.19	0.07	0.13	0.39
Multi-Family *	0.07	0.03	0.02	0.12
All Housing Types (Blended)	0.21	0.10	0.14	0.45
Current Level of Service Standards	*Elementary*	*Middle*	*High*	
Square Feet Per Student	102	127	151	
Cost Per Square Foot	$140	$165	$165	
Local Share of Building Cost	58%	58%	58%	
Total Building Cost Per Student	$8,335	$12,220	$14,500	
Relocatable Classrooms Per Student	0.002	0.002	0.003	
Cost Per Relocatable Classroom	$96,000	$96,000	$96,000	
Relocatable Classroom Cost Per Student	$145	$194	$311	
Acreage Per Student	0.032	0.039	0.043	
Cost Per Acre	$79,000	$79,000	$79,000	
Land Cost Per Student	$2,514	$3,062	$3,389	
Support Facilities Cost Per Student	$619	$619	$619	
Vehicle, Equipment Cost Per Student	$256	$256	$256	
Total Capital Cost Per Student	$11,868	$16,351	$19,075	
Principal Payment Credit Per Student	($503)	($503)	($503)	
Net Capital Cost Per Student	$11,365	$15,848	$18,572	

* Includes Mobile Homes.

Maximum Supportable Impact Fees for Public Schools

Figure 18 shows the schedule of maximum supportable impact fees for public schools in Harford County. The fees are calculated by multiplying the student generation rate by the net capital cost per student for each type of school by type of housing and then added together to derive the total public school impact fee. For example, for a single family unit, the elementary portion of the fee is calculated by multiplying the student generation rate of .25 by the net capital cost per elementary student of $11,365, which results in $2,860 per single family housing

unit. This is repeated for the middle and high school portions of the fee. All three portions of the fee are added together to calculate the total fee by type of residential unit (i.e., for single family, $2,860 + $2,158 + $3,251 = $8,269.)

Figure 18. Harford County Maximum Supportable Public Schools Impact Fee

Maximum, Justifiable Impact Fee per Unit (Countywide)	*Elementary*	*Middle*	*High*	*TOTAL*
Single Family	$2,860	$2,158	$3,251	$8,269
Townhouse	$2,129	$1,179	$2,411	$5,720
Multi-Family *	$808	$492	$338	$1,637

* Includes Mobile Homes.

IMPLEMENTATION AND ADMINISTRATION

All costs in the impact fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of impact fees. One approach is to adjust for inflation in construction costs by means of an index like the one published by Engineering News Record (ENR). This index can be applied against the calculated impact fee. If cost estimates change significantly the County should redo the fee calculations.

Credits and Reimbursements

If a developer constructs a system improvement that was included in the fee calculations, it will be necessary to either reimburse the developer or provide a credit against the fees. The developer must provide sufficient documentation of the actual cost incurred for the system improvement. Harford County should only agree to pay the lesser of the actual construction cost or the estimated cost used in the impact fee analysis. If the County pays more than the cost used in the fee analysis, there will be insufficient fee revenue.

Implementation

The County must adopt a local ordinance to implement the fee according to the specifications outlined in the State enabling statute and follow the procedures prescribed therein. Specifically:

Article 24, §9-10A-01. School construction financing.

(a) In general.- The County Council of Harford County, by ordinance, may fix, impose, and provide for the collection of a development impact fee not to exceed $10,000 for new construction or development.

(b) Special fund.- The County Treasurer shall deposit the revenues from the development impact fee into a special fund.

(c) Use of revenues.- The revenues from the special fund may be used only for:

(1) School site acquisition;

(2) School construction;

(3) School renovation;

(4) School debt reduction; or

(5) School capital expenses.

(d) Collection by municipal corporations.- A municipal corporation within Harford County shall assist the County Council in the collection of the development impact fee within the municipal corporation by:

(1) Collecting and remitting the fee to the county; or

(2) Requiring the fee to be paid to the county in accordance with the terms of the county ordinance.

(e) Reports.- If a development impact fee is enacted under the authority granted to the County Council by subsection (a) of this section, the county shall:

(1) Cause an annual report to be prepared on the revenues generated by the development impact fee and how those revenues were spent; and

(2) Submit the report to the Harford County Delegation of the General Assembly on or before May 31 of each year.

APPENDIX 1. DEMOGRAPHIC & DEVELOPMENT PROJECTIONS

The development projections shown below are used solely for the purpose of having an understanding of the possible future pace of service demands, impact fee revenues, and capital expenditures. As these factors will vary to the extent that future development varies, there will be virtually no effect on the actual amount of the development fee.

Based on discussions with County staff, TA will use County estimates and projections of housing units. The projected number of students are based on the pupil generation rates from Figure 6, combined with the development projections.

Figure 19. Demographic and Development Projections

	Current Estimates	Projections =>									
	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Total Housing Units	90,654	92,146	93,946	95,746	97,546	99,346	101,146	102,646	104,146	105,646	107,146
Single Family	56,022	56,986	57,950	58,914	59,878	60,842	61,806	62,610	63,414	64,218	65,022
Townhouse	17,037	17,550	18,063	18,576	19,089	19,602	20,115	20,542	20,969	21,396	21,823
Multi-Family *	17,595	17,918	18,241	18,564	18,887	19,210	19,533	19,802	20,071	20,340	20,609
Annual Residential Permits	1,800	1,800	1,800	1,800	1,800	1,800	1,500	1,500	1,500	1,500	1,500
Single Family	964	964	964	964	964	964	804	804	804	804	804
Townhouse	513	513	513	513	513	513	427	427	427	427	427
Multi-Family *	323	323	323	323	323	323	269	269	269	269	269

Source: Harford County Planning Department

		2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Single Family	*SGR*											
Elementary	0.25	243	243	243	243	243	243	202	202	202	202	202
Middle	0.14	131	131	131	131	131	131	109	109	109	109	109
High	0.18	169	169	169	169	169	169	141	141	141	141	141
	TOTAL	*543*	*543*	*543*	*543*	*543*	*543*	*453*	*453*	*453*	*453*	*453*
Townhouse	*SGR*											
Elementary	0.18	91	91	91	91	91	91	75	75	75	75	75
Middle	0.08	39	39	39	39	39	39	32	32	32	32	32
High	0.13	67	67	67	67	67	67	56	56	56	56	56
	TOTAL	*196*	*196*	*196*	*196*	*196*	*196*	*163*	*163*	*163*	*163*	*163*
Multi-family	*SGR*											
Elementary	0.07	23	19	19	19	19	19	15	15	15	15	15
Middle	0.03	10	8	8	8	8	8	7	7	7	7	7
High	0.02	6	5	5	5	5	5	4	4	4	4	4
	TOTAL	*39*	*31*	*31*	*31*	*31*	*31*	*26*	*26*	*26*	*26*	*26*
Elementary Total		356	352	352	352	352	352	293	293	293	293	293
Middle Total		180	178	178	178	178	178	148	148	148	148	148
High Total		242	241	241	241	241	241	201	201	201	201	201
TOTAL		**778**	**770**	**770**	**770**	**770**	**770**	**642**	**642**	**642**	**642**	**642**

APPENDIX 2. HARFORD COUNTY IMPACT FEE ENABLING LEGISLATION

Article 24, §9-10A-01. School construction financing.

(a) In general.- The County Council of Harford County, by ordinance, may fix, impose, and provide for the collection of a development impact fee not to exceed $10,000 for new construction or development.

(b) Special fund.- The County Treasurer shall deposit the revenues from the development impact fee into a special fund.

(c) Use of revenues.- The revenues from the special fund may be used only for:

(1) School site acquisition;

(2) School construction;

(3) School renovation;

(4) School debt reduction; or

(5) School capital expenses.

(d) Collection by municipal corporations.- A municipal corporation within Harford County shall assist the County Council in the collection of the development impact fee within the municipal corporation by:

(1) Collecting and remitting the fee to the county; or

(2) Requiring the fee to be paid to the county in accordance with the terms of the county ordinance.

(e) Reports.- If a development impact fee is enacted under the authority granted to the County Council by subsection (a) of this section, the county shall:

(1) Cause an annual report to be prepared on the revenues generated by the development impact fee and how those revenues were spent; and

(2) Submit the report to the Harford County Delegation of the General Assembly on or before May 31 of each year.

[2004, ch. 389.]

APPENDIX 3. GLOSSARY OF TERMS

Buy-in methodology: Impact fee methodology best suited for facilities that were oversized in anticipation of new growth and have available capacity. New growth "buys-in" to the facility through the impact fee and pays the local government back for oversizing the facility.

Impact Fees: One-time payments used to construct system-wide, capacity improvements needed to accommodate new development. An impact fee represents new growth's fair share of capital facility needs.

Incremental expansion methodology: Impact fee methodology based on existing LOS. It is assumed is that the existing LOS will be extended to new growth via the impact fee.

Plan-based methodology: Impact fee methodology that utilizes projects in the capital improvement program (CIP) that will add capacity.

Principal payment credit: Double payment occurs when an impact fee is paid for a capital facility that is also being paid for via annual property tax levy. To avoid double payment for capital facilities that have been debt financed, a principal payment credit is calculated based on the outstanding principal payments. The credit is then deducted from the impact fee amount, thus avoiding double payment.

Pupil generation rate or **yields:** Refers to the number of public school student per housing unit. Public school students are a subset of school-aged children, which includes students in private schools and home-schooled children.

Rational Nexus: Requirement that there must be proportionality between the amount of the fee and the type and amount of facilities demand generated by the development and that there must be a reasonable connection between the use of the fees and the benefits accruing to new development.

Site-specific credit: Developers may be eligible for site-specific credits or reimbursements only if they provide system improvements that have been included in the impact fee calculation schedule. Project improvements normally required as part of the development approval process are not eligible for credits against impact fees. Specific policies and procedures related to site-specific credits for system improvements are addressed in the ordinance that establishes the County's impact fees.